Outbreaks should be detected & prevented at an early stage!

WHO Hub for Pandemic and Epidemic Intelligence


Chikwe Ihekweazu
COVID-19 Global research & innovation forum
24 Feb 2022
WHO’s Public Health Intelligence Capabilities

Monthly PHI Activity Level

- 9,000,000 pieces of information retrieved
- 43,000 signals screened
- 4500 events interrogated
- 30 events verified

HQ + 6 Regional Offices + 146 Country Offices
The WHO Hub: Responding to global needs

WHO should develop a mechanism for States Parties to automatically **share real-time emergency information**, incl. genomic sequencing, needed by WHO for risk assessment [...] 

WHO to establish a **new global system for surveillance** based on full transparency by all parties, using state-of-the-art digital tools to connect information centres around the world and include animal and environmental health surveillance, with appropriate protections of people’s rights.

Create an agile health emergency system that can deliver on equity through better information sharing, and an **end-to-end mechanism for research**, development, and equitable access to common goods [...] 

WHO strengthen the technical capacities of the WHE Program to include social scientists and gender-equality experts to address the socioeconomic & gender-related implications of public health emergencies.
Challenges highlighted by the COVID-19 Pandemic

**Data Access**
- Data access & sharing
- Data fragmentation
- Data sharing delays

**Data Analytics**
- Data linkage to assess health threats
- Need for new tools and methods
- Data accessibility in real-time

**Actionable Insights**
- Limited contextual information
- Delays in analysis
- Delays/lack of insight dissemination

**Capability for Action**
- Varying country capacity for appropriate action
- Data for policy making
- Evidence-based leadership
Pandemic & Epidemic Intelligence for Managing Health Emergencies

Better data
Better analytics
Better decisions
Highlights to date

1 Sep 2021
Inauguration in Berlin

25 Oct 2021
Dr. Ihekweazu appointed

Nov 2021
WHS session on ecosystem

Nov 2021
Start-up team in place

Dec 2021
Engagements in EURO

Dec 2021
EIOS GTM

Dec 2021
WHO Hub office

Jan 2022
Engagements in EMRO

Strategic Vision

Early conceptualization

Global outreach & consultations

Operationalize WHO Hub
Collaborate, engage and consult
Scale and accelerate existing initiatives
Strengthen countries capacity
Mission and Strategic Objectives

Mission
To build a system of collaborative intelligence enabling better decisions to avert and manage pandemic & epidemic risks

Strategic Objectives

1. Create a multi-disciplinary collaborative environment
2. Build a global ecosystem to connect data from a wide range of sources
3. Facilitate robust analytic tools that are widely available
4. Drive a global agenda for responsible R&D in surveillance
5. Provide consulting, training & capacity building services
6. Support timely and effective decision-making and policy-setting
7. Harmonize global surveillance for public health emergencies
8. Cultivate expertise in applied epidemiology
A new approach: Embracing complexity

- Genetic sequencing
- Weather patterns
- Human behaviour
- Population mobility
- Animal movement
- Public health events
Working on the future of surveillance

The COVID-19 pandemic has exposed weaknesses in disease surveillance in nearly all countries. Early identification of COVID-19 cases and clusters for rapid containment was hampered by inadequate diagnostic capacity, insufficient contact tracing, fragmented data systems, incomplete data insights for public health responders, and suboptimal governance of all these elements. Once SARS-CoV-2 became widespread, interventions to control community transmission were undermined by weak surveillance of cases and insufficient national capacity to integrate data for timely adjustment of public health measures.² Although some countries had little or no reliable
Research Priorities 1

Traditional case-based surveillance systems

- Improving surveillance performance characteristics using POC diagnostics & other testing options
- Novel approaches to digitization for public health surveillance
- New approaches to data curation and synthesis for clinical surveillance data
- Strategies for incorporating WGS into surveillance systems

Event-based surveillance systems

- Extracting and summarizing unstructured data
- Optimizing signal detection
- Identifying misinformation or “fake news”
- Machine learning tools to support surveillance analysts
Research Priorities 2

**Other surveillance concepts and methods**

- Metrics for measuring surveillance systems performance
- Approaches for the synthesis of environment, one health, and other data sources
- New community-based surveillance approaches
- New participatory surveillance methods
- Novel digital surveillance methods

**Decision making approaches**

- Systems to evaluate decision-making performance
- Ways to present data to facilitate decision making
- Engagement with citizens for public health decision making
Research Priorities 3

Modeling and forecasting approaches

- Ensemble methods for modeling
- Nowcasting approaches
- Agent-based modeling
- Scenario modeling for intervention options

Behavioral surveillance

- Measuring behavior for public health surveillance
- Identifying dimensions of behavior predictive of disease transmission
- Citizen engagement
Worlds’s Public Health Intelligence Capabilities

A system of collaborative intelligence enabling better decisions to avert and manage pandemic & epidemic risks